[Title of the Document] CLAIMS

[Claim 1]

A control system for controlling an output of a controlled object by a plurality of control inputs, comprising:

target value-calculating means for calculating a target value as a target of the output of the controlled object, according to a state of the controlled object;

filtering target value-calculating means for calculating one filtering target value for setting follow-up responsiveness of the output of the controlled object to the target value, by performing a predetermined filtering process on the calculated target value; and

control input-calculating means for calculating the control inputs with a plurality of predetermined feedback control algorithms, respectively, in a manner such that the output of the controlled object converges to the calculated one filtering target value.

[Claim 2]

A control system as claimed in claim 1, wherein said filtering target value-calculating means calculates the one filtering target value in a manner such that the follow-up responsiveness of the output of the controlled object to the target value becomes higher as a degree of change in the target value is larger.

[Claim 3]

A control system as claimed in claim 1, wherein the predetermined feedback control algorithms are formed by a plurality of predetermined response-specifying control algorithms, respectively, and

wherein said control input-calculating means calculates the control inputs while sharing one linear function defining a converging behavior and a convergence rate of the output of the controlled object to the one filtering target value between the predetermined response-specifying control algorithms.

[Claim 4]

A control system as claimed in claim 1, wherein the output of the controlled object is rotational speed of an internal combustion engine, and

wherein the control inputs comprise a control input for controlling an intake air amount of the engine, and a control input for controlling ignition timing of the engine.

[Claim 5]

A control system as claimed claim 1, wherein the output of the controlled object is an intake air amount of an internal combustion engine, and

wherein the control inputs comprise a control input for controlling boost pressure of the engine, and a control input for controlling an EGR amount of the engine.

[Claim 6]

A control system as claimed in claim 3, wherein said control input-calculating means sets respective gains to be used in calculating the control inputs according to a value of the one linear function.

[Claim 7]

A control system as claimed in claim 3, wherein said control input-calculating means calculates at least one of the control inputs according to an integral value of the one linear function, while performing a forgetting process on the integral value

of the one linear function.

[Claim 8]

A control system as claimed in claim 3, further comprising disturbance estimation value-calculating means for calculating a plurality of disturbance estimation values for compensating for disturbance and modeling errors adversely affecting the controlled object, with respective predetermined estimation algorithms based on a model defining relationships between each of the disturbance estimation values, each of the control inputs, and the output of the controlled object, and

wherein the predetermined estimation algorithms set respective estimation gains of the disturbance estimation values according to the value of the one linear function, and

wherein said control input-calculating means calculates the control inputs according to the respective disturbance estimation values.

[Claim 9]

A control system as claimed in claim 3, further comprising disturbance estimation value-calculating means for calculating a plurality of disturbance estimation values for compensating for disturbance and modeling errors adversely affecting the controlled object, with respective predetermined estimation algorithms based on a model defining relationships between each of the disturbance estimation values, each of the control inputs, and the output of the controlled object, and

wherein the predetermined estimation algorithms perform a predetermined forgetting process on at least one of the disturbance estimation values, and

wherein said control input-calculating means calculates the control inputs according to the respective disturbance estimation values.

[Claim 10]

A control system for controlling an output of a controlled object by a plurality of control inputs, comprising:

target value-calculating means for calculating a target value as a target of the output of the controlled object, according to a state of the controlled object; and

control input-calculating means for calculating the control inputs with a plurality of predetermined response-specifying control algorithms, respectively, while sharing one linear function defining a converging behavior and a convergence rate of the output of the controlled object to the one filtering target value between the predetermined response-specifying control algorithms, in a manner such that the output of the controlled object converges to the calculated target value.

[Claim 11]

A control system as claimed in claim 10, wherein said control input-calculating means sets respective gains to be used in calculating the control inputs, according to a value of the one linear function.

[Claim 12]

A control system as claimed in claim 10, wherein said control input-calculating means calculates at least one of the control inputs according to an integral value of the one linear function, while performing a forgetting process on the integral value of the one linear function.

[Claim 13]

A control system as claimed in claim 10, further comprising disturbance estimation value-calculating means for calculating a plurality of disturbance estimation values for compensating for disturbance and modeling errors adversely affecting the controlled object, with respective predetermined estimation algorithms based on a model defining relationships between each of the disturbance estimation values, each of the control inputs, and the output of the controlled object, and

wherein the predetermined estimation algorithms set respective estimation gains of the disturbance estimation values according to the value of the one linear function, and

wherein said control input-calculating means calculates the control inputs according to the respective disturbance estimation values.

[Claim 14]

A control system as claimed in claim 10, further comprising disturbance estimation value-calculating means for calculating a plurality of disturbance estimation values for compensating for disturbance and modeling errors adversely affecting the controlled object, with respective predetermined estimation algorithms based on a model defining relationships between each of the disturbance estimation values, each of the control inputs, and the output of the controlled object, and

wherein the predetermined estimation algorithms perform a predetermined forgetting process on at least one of the disturbance estimation values, and

wherein said control input-calculating means

calculates the control inputs according to the respective disturbance estimation values.

[Claim 15]

A control system as claimed in claim 10, wherein the output of the controlled object is rotational speed of an internal combustion engine, and

wherein the control inputs comprise a control input for controlling an intake air amount of the engine, and a control input for controlling ignition timing of the engine.

[Claim 16]

A control system as claimed claim 10, wherein the output of the controlled object is an intake air amount of an internal combustion engine, and

wherein the control inputs comprise a control input for controlling boost pressure of the engine, and a control input for controlling an EGR amount of the engine.